CURRENT NOTES ON METEOROLOGY.

MONTHLY WEATHER REVIEW.

RECENT numbers of the *Monthly Weather Review* have contained articles of general interest as follows:

No. 3, 1905; 'Application of Mathematics in Meteorology,' by Professor F. H. Bigelow. Reprinted from *Bull. Phil. Soc. Wash.*, Vol. 14, 1905, p. 215. Summary of the mathematical state of certain important meteorological problems. 'The Diurnal Periods of the Barometric Pressure,' by the same author. 'Tornado in Eastern Alabama, March 20, 1905,' by F. P. Chaffee. The usual phenomena accompanied this tornado. 'The Variations in Atmospheric Transparency during 1902, 1903 and 1904,' by H. H. Kimball. A comparison of some of the results obtained in the United States and in the Pyrenees. 'Twilight Glows and Connected Phenomena observed in 1902, 1903 and 1904, in the Pyrenees,' by E. Marchand. From the *Ann. Soc. Met. de France,* February, 1905. This includes observations on the diminution of solar radiation. 'Tornado near Bluff Springs, Fla., March 20, 1905.'

No. 4, 1905: 'The Diurnal Periods of the Vapor Tension, the Electric Potential and Coefficient of Dissipation' and 'The Observations with Kites at the Blue Hill Observatory, 1897–1902,' by Professor F. H. Bigelow. 'Mathematical Theory of the Nocturnal Cooling of the Atmosphere,' by S. T. Tamura. A historical and critical survey of the problem of the nocturnal cooling of the atmosphere, and a mathematical theory of the nocturnal cooling of the atmosphere near the earth's surface. 'The Influence of Small Lakes on Local Temperature Conditions,' by James L. Bartlett. A study of the influence of Lakes Mendota and Monona, and of other smaller lakes, upon the climate of Madison, Wis. 'Wind Velocities for Different Altitudes and Exposures,' by A. J. Mitchell. Observations made at Jacksonville, Fla. The conclusion is that an increase in elevation of the anemometer cups of 50 to 60 feet results in an increase of approximately one mile per hour in the lower circulation at Jacksonville. 'Tornadoes of March 17, 1905, in Western Oklahoma,' by C. M. Strong. 'A Cold-Weather Dust Whirl,' by F. W. Proctor. A dust whirl at 11 A.M. March 13, 1905, over frozen ground, at Fairhaven, Mass. A very rare phenomenon. 'Note on the Winds of the Region adjacent to the Gulf of California,' by Professor George H. Stone. These winds come persistently from about south, and have a constancy which the author describes as monsoonal. 'A Heavy Deposit of Hoarfrost and its Effect in Retarding Nocturnal Cooling,' by D. A. Seeley. At Peoria, Ill., illustrated by a thermograph curve. A good example for use in teaching. 'Tornado of April 14, near Pensacola, Fla.,' by Wm. F. Reed, Jr. 'Meteorological Course at Williams College,' being part of a syllabus used in teaching. The course is unusually complete.

ISLANDS FOR PURPOSES OF WEATHER FORECASTING.

IN *Nature* for June 1, 1905, Dr. W. J. S. Lockyer points out the need of securing weather observations from islands to windward of the continents when possible, in order that the conditions which are approaching the lands from the sea may be known in advance. The value of wireless telegraph messages from vessels to the west of the British Isles; of reports from the West Indies to the United States; from Mauritius to India and to Africa; of Tristan d'Acunha to Africa, etc., is emphasized. It is pointed out that conditions at a great distance are important in determining seasonal weather of many countries. Thus the air current which passes the western coast of Australia in July later becomes the southeast trade of the Indian Ocean, and finally reaches India as the southwest monsoon.

METEOROLOGY AND OTHER SCIENCES.

CAPTAIN D. WILSON-BARKER, R.N.R., in his presidential address before the Royal Meteorological Society, London (*Quart. Journ. Roy. Met. Soc.*, April, 1905), spoke of 'The Connection of Meteorology with other Sciences,' pointed out that meteorology deserves much more attention than it receives, and expressed the wish that the subject might be taught in schools. 'The United States,' said Captain Wilson-Barker, 'have devoted much attention

to meteorology, with most satisfactory results.' One point in his address must commend itself to many persons who try to keep up with the progress that is being made along the various branches of meteorological science, and that is the plea for maintaining 'a comprehensive outlook on the whole field of investigation,' which is important in these days of intense specialization.

A NEW TEXT-BOOK OF METEOROLOGY.

THE June number of the *National Geographic Magazine* contains an article entitled 'Forecasting the Weather and Storms,' by Professor Willis L. Moore, chief of the Weather Bureau. This article occupies all but three pages of this number. It is illustrated by means of numerous weather maps, storm charts and half-tone prints, and is to form, as we learn, one chapter in a forthcoming book by Dr. Moore, entitled 'The New Meteorology.' The author's experience in the Weather Bureau, and the exceptional facilities at his command, will doubtless result in producing a popular book which will be very widely read.

NOTES.

AT a recent exhibition of meteorological instruments held under the auspices of the Royal Meteorological Society in London, one of the most interesting exhibits was a series of twenty-four-hour traces of continuous sunshine, obtained on the Antarctic expedition of the *Discovery*.

Consular Report for February, 1905, contains a report by the American consul at Nottingham, England, on the fogs of that district, their relation to commerce, business and health, and the suggestions that have been made regarding the dispelling of fogs.

A PAPER by Forel in the *Archives des Sciences physiques et naturelles* for March, 1905, summarizes the observations of Bishop's ring which followed the Mont Pelée eruption of May 8, 1902.

PROFESSOR ANGELO MOSSO (*Atti dei Lincei*, XIV., (1)), has made experiments on the effect of carbon dioxide as a remedy for mountain sickness, and recommends that about eight per cent. of CO_2 should be added to the compressed oxygen which is taken for use during high balloon ascents.

R. DE C. WARD.

NOTES ON INORGANIC CHEMISTRY.

SOLUTIONS IN LIQUID AMMONIA.

THE modern theories of solution are based almost exclusively upon phenomena taking place in aqueous solution. It is true that the action of other solvents, especially the organic, has been studied, as well as that of liquid ammonia, and to a lesser extent of liquid hydrogen chlorid, sulfid and fluorid. But this work has contributed little to the theory of solutions in general, nor have the theories of solution in water been to any considerable extent successfully applied to other solvents. During the past eight years Professor E. C. Franklin, now of Stanford University, has done much work on solutions in liquid ammonia, and in a recent *Journal* of the American Chemical Society he has brought forward a rather notable generalization, which brings the liquid ammonia solutions into line with water solutions. It has long been recognized that liquid ammonia stands near water as a solvent. It is an associated liquid with a fairly high dielectric constant. While inferior generally to water as a solvent, it has marked power of ionization, the more dilute ammonia solutions being even better conductors of electricity than aqueous solutions of the same concentration. As water from the standpoint of solution is to be looked upon as a compound of H ions and OH ions, so ammonia is a compound of H ions and NH_2 ions. When acids are dissolved in liquid ammonia they form, as a matter of course, ammonium salts, but nevertheless they retain true acid properties. They discharge the color of phenolphthalein; they dissolve metallic sodium and some other metals with the evolution of hydrogen and the formation of metallic salts; they dissolve certain metallic oxids and basic salts which are insoluble in the liquid ammonia. Here the acid ion seems to be not H, but NH_4, or as we may write it, $NH_3 . H$. It is, however, by no means im-